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Claim 1 (currently amended). An electronic component with shielding against stray electromagnetic fields, the electronic component comprising:

a ground potential terminal for receiving an external ground potential;

a semiconductor chip having a semiconductor substrate with an active upper side and a passive rear side having a surface area;

at least one ground lead disposed within said semiconductor substrate and having at least one contact area contacting said upper side of said semiconductor substrate for connecting to said ground potential terminal; and

a continuous electrically conductive buried layer having a surface area corresponding in size to said surface area of said passive rear side and entirely extending over said surface area, said buried layer disposed within said

semiconductor substrate adjacent said passive rear side and connected to said ground potential terminal through said ground lead for providing a rear side shielding with said buried layer, and said buried layer being formed of a semiconductor material doped with an impurity concentration of over $1 \times 10^{20} \text{ cm}^{-3}$.

Claim 3 (currently amended). The electronic component according to claim 2 1, wherein said semiconductor material is identical to a material forming said semiconductor substrate.

Claim 4 (original). The electronic component according to claim 1, wherein said semiconductor substrate is formed of monocrystalline silicon.

Claim 5 (original). The electronic component according to claim 1, including an electrically conductive annular layer extending from said upper side of said semiconductor substrate to said buried layer, and disposed in an edge region of said semiconductor chip.

Claim 6 (original). The electronic component according to claim 5, wherein said electrically conductive annular layer is formed of a semiconductor material doped with an impurity concentration of over $1 \times 10^{16} \text{ cm}^{-3}$.

Claim 7 (original). The electronic component according to claim 1, wherein the electronic component is a component of a flip-chip mounting technique.

Claim 8 (original). The electronic component according to claim 1, wherein the electronic component is a radio-frequency component.

Claim 9 (currently amended). The electronic component according to claim 1, including solder formations selected from the group consisting of solder balls and solder contact bumps disposed on said contact area, and a shielding ground-carrying line connected to said solder formations.

Claim 10 (original). The electronic component according to claim 9, including a mounting device selected from the group consisting of a printed circuit board and a ceramic substrate, and said solder formations mounted to said mounting device.

Claim 11 (original). The electronic component according to claim 5, including:

output contact areas;

a wiring foil with connecting lines disposed on said upper side of said semiconductor substrate, said contact area of said semiconductor chip is one of a plurality of contact areas and said connecting lines of said wiring foil connecting said contact area of said semiconductor chip to said output contact areas distributed on said wiring foil; and

solder formation selected from the group consisting of solder balls and solder contact bumps disposed on said output contact areas.

Claim 12 (original). The electronic component according to claim 11, wherein said ground potential terminal is connected through at least one of said solder formations, through said wiring foil and through said annular layer to said buried layer.

Claim 29 (new). The electronic component according to claim 1, including a shielding ground-carrying line connected to said at least one contact area.